# PENAMBAHAN SUSU SKIM BUBUK, KARAGINAN DAN *WHEY PROTEIN CONCENTRATED* TERHADAP SINERESIS, DAYA IKAT AIR DAN *WHEY* BEBAS YOGURT RENDAH LEMAK

## (ADDITION OF SKIM MILK POWDER, CARRAGEENAN AND WHEY PROTEIN CONCENTRATE TO SYNERESIS, WATER HOLDING CAPACITY DAN FREE WHEY LOW FAT YOGHURT)

**Dissa Frida Hernita, Juni Sumarmono dan Kusuma Widayaka**
Fakultas Peternakan Universitas Jenderal Soedirman, Purwokerto
dissafrd.hernita@gmail.com

**ABSTRAK**

Penelitian bertujuan untuk mengetahui pengaruh penambahan susu skim bubuk, karaginan dan WPC pada yogurt rendah lemak terhadap sineresis, daya ikat air dan *whey* bebas. Materi yang digunakan yaitu susu rendah lemak komersial 12 liter, susu skim rekonstitusi 1 liter, 1 sachet starter bubuk, susu skim bubuk 300 gram, karaginan 60 gram dan WPC 300 gram. Penelitian menggunakan metode eksperimen dengan rancangan acak lengkap 4 perlakuan dan 6 kali ulangan. Perlakuan yang dilakukan yaitu T0 : yogurt rendah lemak tanpa penambahan bahan pengental, T1 : yogurt rendah lemak + susu skim bubuk 10%, T2 : yogurt rendah lemak + karaginan 2% dan T3 : yogurt rendah lemak + WPC 10%. Variabel yang diukur adalah sineresis, daya ikat air dan *whey* bebas. Data dianalisis menggunakan perhitungan Analisis Variansi, jika hasilnya berbeda nyata maka dilakukan uji lanjut menggunakan uji Beda Nyata Jujur (BNJ). Hasil penelitian menunjukkan bahwa penambahan susu skim bubuk, karaginan dan WPC berpengaruh sangat nyata ($P<0,01$) terhadap sineresis, daya ikat air dan *whey* bebas yogurt rendah lemak. Penambahan susu skim bubuk pada yogurt rendah lemak menghasilkan sineresis terendah yaitu 42,34%. Daya ikat air tertinggi (57,14%) yogurt rendah lemak terdapat pada penambahan susu skim bubuk. Hasil terendah whey bebas (2,95%) yogurt rendah lemak terdapat pada penambahan karaginan. Kesimpulannya adalah penambahan bahan pengental pada yogurt rendah lemak dapat menurunkan terjadinya sineresis, meningkatkan daya ikat air dan mengurangi terpisahnya cairan *whey* keluar dari gel.

Kata Kunci : yogurt, sineresis, daya ikat air, *whey* bebas, bahan pengental

**ABSTRACT**

The purpose of this researche was to determine the effect of the addition of skimmed milk powder, carrageenan and WPC on low-fat yogurt to syneresis, water holding capacity and free whey. The materials used were 12 liters of commercial low-fat milk, 1 liter of reconstituted skim milk, 1 powder starter sachet, 300 grams of skimmed milk powder, 60 grams of carrageenan and 300 grams of WPC. The study used an experimental method with a completely randomized design 4 treatments and repeat 6 times. The treatment is T0: low-fat yogurt without the addition of thickener, T1: low-fat yogurt + 10% skimmed milk powder, T2: low-fat yogurt + carrageenan 2% and T3: low-fat yogurt + WPC 10%. The variables measured are syneresis, water holding capacity and free whey. The researche were analyzed using Variance Analysis calculations, if the results were significantly different then further tests were carried out using the Completely Randomized Design (CRD). The results showed that the addition of skimmed milk powder, carrageenan and WPC had a very significant effect ($P<0.01$) on syneresis, water holding capacity and low fat free whey yogurt. The addition of skimmed milk powder in low-fat yogurt produced the lowest syneresis of 42.34%. The highest water binding capacity (57.14%) in low-fat yogurt is found in the addition of skim milk

powder. The lowest yield of free whey (2.95%) in low-fat yogurt is found in the addition of carrageenan. The conclusion is that the addition of thickener in low-fat yogurt can reduce the occurrence of syneresis, increase the water holding capacity and reduce the separation of whey liquid out of the gel.

Key Words : yogurt, syneresis, water holding capacity, free whey, thickener